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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/272,835	03/19/1999	FREDERIC J. DE SAUVAGE	P1268R1	6145

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EXAMINER
HAYES, ROBERT CLINTON

ART UNIT	PAPER NUMBER
1647	37

DATE MAILED: 10/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/272,835	DeSauvage et al
Examiner	**Art Unit**
Robert C. Hayes, Ph.D.	1647

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *May 12, 2003*.

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *98-102* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *98-102* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). *34*
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/22/03 has been entered.

2. Applicant's arguments filed 1/23/03 and 5/12/03 have been fully considered but they are not persuasive.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 98-102 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and/or substantial asserted utility or a well established utility, for the reasons made of record for cancelled claims 72-73, 77, 81 & 85 in Paper Nos: 10 (mailed 10/27/00) & 24 (mailed 7/24/02), and as follows.

Applicants argue on page 4 of the 1/22/03 response that "[t]he present invention includes disclosure concerning the function of GFRα3, *although the native ligand of GFRα3 was*

unknown at the time of filing the present invention" [emphasis added], that "the specification teaches that "GFRα3... can be used to treat conditions involving dysfunction of the autonomic nervous system *including, but not limited to*, disturbances in blood pressure or cardiac rhythm, gastrointestinal function, impotence, and urinary continence"[emphasis added], and that "[t]he important role of GFRα3 in the survival of peripheral neurons has [now] *been confirmed following the discovery of its native ligand*, artemin (neublastin)"[emphasis added], and cites a transgenic mouse publication by Nishino et al (1999) that putatively "confirmed that GFRα3 is required for migration and survival of the superior cervical ganglion", which is published 1 year after the claimed priority date of the instant application of 3/23/98 and in which no description concerning "migration and survival of the superior cervical ganglion" is contemplated within the instant specification. Applicants then argue on page 9 of this response and pages 4-5 of the 5/12/03 response that "the specification... provides that '*[a]gents which bind to the GFRα3 molecule could be useful* in the treatment of diseases or conditions involving the peripheral nervous system,' such as 'peripheral neuropathies associated with diabetes, HIV, chemotherapeutic agent treatments' and neuropathic pain"[emphasis added], that "*[t]hus, ligand which act via GFRα3 will be particularly useful* to treat disorders of the peripheral nervous system while including fewer side effects on weight loss, motor function, or on kidney function than would ligands acting via GFRα1 or GFRα2" [emphasis added], and refers to putative data in Example 5 of the specification. Lastly, Applicants argue in the 5/12/03 response what constitutes "[t]he legal framework", that "utility should be examined in context of the claimed

invention", that "[t]he asserted utility is not based in any way on the discovery of putative ligands of GFRα3 that were not known in the art at the effective filing date of the present application", and cites Brenner v. Manson. In contrast to Applicants' arguments, the only way to have an use for a "receptor" in putatively treating disease is through activation of the receptor through ligand binding, which must first be known in the art at the time of filing the instant application. In other words, arguments related to antibodies "could be readily generated" does not address the issue of what is the specific or substantial utility for the receptor, GFRα3, at the time of filing the instant application. Just like data related to *murine* GFRα3 published 17 months after the claimed priority date of the instant application does not reasonably show Applicants were in possession of any alleged utility at the time of filing the instant application, nor does an invitation to others to experiment to discover what specific parameters of a specific disease state may be treated when only a laundry list "including, but not limited to..." is provided within the instant specification, as previously made of record. Nor does an invitation for others to discover uses for unknown and undescribed "agonists or antagonists" or "antibodies... [that allegedly could] readily be generated at the filing date of this application" reasonably provide a specific and substantial utility of the instant invention. *In arguendo*, many compounds putatively may treat the laundry list of disease states, in which the mere presence of the encoded receptor in such alleged treatable tissues still does not address the issue that it would alternatively be the "ligand" to this receptor, when later discovered, that must be administered to tissue possessing the GFRα3 *receptor* that would putatively have such a wide utility, as described in the passages

recited by Applicants. Again, as previously made of record, without knowing the native ligand of the GFRα3 "receptor" at the time of filing the instant invention, one of ordinary skill in the art would not reasonably know what specific "conditions" could reasonably be "treat[ed]", nor reasonably know what functional "agonists or antagonists" putatively exist, until later discovered. Accordingly, the court in *Vas-Cath Inc. v. Mahurkar,* 19 USPQ2d 1111, 1117, still make clear that "applicant must convey with reasonable clarity to those skilled in the art that, *as of the filing date sought*, he or she was in possession *of the claimed invention* [emphasis added]", which the current specification does not adequately describe.

Accordingly, the instant situation is analogous to that decided by the courts in *Brenner v. Manson*, 148 U.S.P.Q. 689 (Sus. Ct, 1966), in which a novel compound which was structurally analogous to other compounds which were known to possess anti-cancer activity was alleged to be potentially useful as an anti-tumor agent in the absence of evidence supporting this utility. The court expressed the opinion that all chemical compounds are "useful" to the chemical arts when this term is given its broadest interpretation. However, the court held that this broad interpretation was not the intended definition of "useful" as it appears in 35 U.S.C. §101, which requires that an invention must have either an immediately obvious or fully disclosed "real world" utility. In particular, the court held that:

> "The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility", "[u]nless and until a process is refined and developed to this point-where specific benefit exists in currently available form-there is insufficient justification for permitting an applicant to engross what may prove to

be a broad field", and "a patent is not a hunting license", "[i]t is not a reward for the search, but compensation for its successful conclusion."

Therefore, because no known specific biological activity is described within the instant specification nor specifically associated with any nucleic acid that encodes the polypeptides of SEQ ID NO: 17, because the specification merely discloses on page 55 that the human "GFRα3 does not bind any of these [GDNF family member] molecules (Figure 9C)", and that "GFRα3 is thus an orphan receptor", the claimed polynucleotides have no specific nor substantial utility because further experimentation is also necessary at the time of filing the instant invention to attribute a function and "real world" utility to the claimed nucleic acid molecules.

Applicant is again directed toward the Revised Interim Utility Guidelines, Federal Register, Vol.64, No.244, pages 71427-71440, Tuesday December 21, 1999.

5. Claims 98-102 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and/or substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention, for the reasons made of record in Paper NOs: 10 (mailed 10/27/00) & 24 (mailed 7/24/02).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Robert Hayes whose telephone number is (703) 305-3132. The examiner can normally be reached on Monday through Thursday, and alternate Fridays, from 8:30 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Kunz, can be reached on (703) 308-4623. The fax phone number for this Group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Robert C. Hayes, Ph.D.
September 29, 2003